

In re: Bain et al.
Serial No.: 09/980,219
Filed: April 18, 2002
Page 2 of 6

require any additional search beyond for claims 1-21 and 24-25. Therefore, Applicants respectfully request reconsideration of the restriction requirement and note that Applicants will affirm the election, if necessary, after the next Action.

II. Rejections under 35 U.S.C. § 103(a)

Claims 1-21 and 24-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hartman et al., Everaerts et al., Makhoul et al., Gehlsen or EP 0717091. Applicants respectfully traverse this rejection for the reason set forth below.

To establish a prima facie case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claim, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). To support combining references, evidence of a suggestion, teaching, or motivation to combine must be clear and particular, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). The Court of Appeals for the Federal Circuit has also stated that, to support combining or modifying references, there must be particular evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000). Respectfully, as will be discussed below, the Official Action fails to meet the requirements for a showing of obviousness under § 103.

Applicants submit that Hartman et al. do not teach or suggest the present invention. Hartman et al. teach the use of a double-sided tape in its composition. Furthermore, Hartman et al. teach that the core of the multiple flexible tape, which is used as a printing press holder, is a thermoplastic elastomer matrix (not an adhesive)

containing a substantially uniform distribution of voids (See, Fig. 1). The voids are generated by a blowing agent and not by thermally expandable microspheres. The tape comprises at least one skin layer formed by a thermoplastic polymer film and a core layer having a central void volume determined by the proportion of blowing agent and by the degree of expansion of the blowing microspheres. Accordingly, the voids have a size that is at least an order of magnitude lower than the microspheres of said blowing agent prior to expansion. The voids give the core layer compressibility (which has nothing to do with debonding adhesives as in the present invention) and a tear strength to cope with compressive loads imposed during printing and tear or shear loads imposed during tape removal. In Hartman et al, foam facilitates the removal of the adhesive tape, but it does not provide for the complete release by expansion (as per the microcapsules of the present invention). In essence, the separation of the tape is not due to the interface where the voids are not present but is due only to its skin layer. Therefore, Hartman et al. neither teaches nor suggest the elements of a composition comprising an adhesive agent and dispersed therein thermoexpandable microcapsules as recited in the present claims.

Hartman et al. further state in column 12 lines 33 to 37, that the blowing agent microspheres include an expandable thermoplastic shell, which contains a liquid that is vaporized during the expansion and is contained substantially within the expanded thermoplastic shell. This is quite different from the present invention where, the microspheres of the present invention contain a blowing agent which evaporates **without** creating voids in the matrix as the microspheres remain integral with their expanded skin. Furthermore, the present invention as claimed recites that the microcapsules each comprise a shell as recited in claim 2-3, 11-14 and 21. Thus, in the expanded matrix of the present invention, there are no voids but expanded microcapsules having their expanding liquid vaporized through their shells without creating any voids in the matrix.

Thus, Hartman et al. merely suggest the use of thermally expandable blowing agent microspheres to create one or more layers of cellular thermoplastic elastomer by spherical voids created by blowing agents, *i.e.*, a foamable thermoplastic during a co-extruded multilayer tape. The microcapsules of the present invention do not create fixed expanded voids in a core of a tape. Instead it creates expanded microcapsules

on command in an adhesive system or in its interface to remove the microcapsules easily from its substrate at any time by heating command. Accordingly, Applicants submit that the present invention is not obvious in view of Hartman et al.

Everaerts et al. similarly fail to teach or suggest the present invention. Everaerts et al. teach a clear and essentially colorless adhesive containing an abundance of polymerizing materials that, by heating or by subjecting the material to UV radiation, realizes a tackified pressure sensitive tape for use with material substrates such as metal and plastic panels. Everaerts et al. also teach a foam-like pressure sensitive adhesive tape/sheet. Furthermore, Everaerts et al. teach a liquid monomer which may include microspheres that have already expanded or can be thermally expandable. However, the contribution of the expanded plastic microspheres creates a pressure sensitive tape by foaming in order to make a tape with suitable pressure tackiness. Thus, Everaerts et al. do not teach the presently claimed invention of "a composition comprising an adhesive agent and dispersed therein thermoexpandable microcapsules." Therefore, Applicants respectfully request withdrawal of this 35 U.S.C. § 103(a) rejection.

Applicants submit that the Makhlof et al. reference also fails to teach or suggest the presented invention. Makhlof et al. disclose a method of reinforcing thin rigid plates by spraying a curable composition onto one side of the rigid plate and curing the polymer composition while only in contact with the rigid plate. The thermosetting compositions contains thermosetting epoxy resins, expandable microspheres, particulate reinforcing materials such as milled glass and carbon fibers. There is no mention of adhesive agents. The thermally expanded microspheres are used to avoid the shrinkage of the composite thermosetting materials (column 3 lines 46-47). The thermally expanded microspheres are not used in the adhesion-deactivating bonded surfaces since the composition does not contain an adhesive. Thus, the citation does not teach or suggest the adhesive de-bonding thermally expandable microcapsule composition as recited in the claims of the present invention. Accordingly, Applicants submit that the present invention is not obvious in view of Makhlof et al.

Gehlsen et al. also fail to teach or suggest the present invention. Gehlsen et al. teach the production of foam articles with substantially smooth surfaces (column 2

line 57 -60). "foam-in-place" articles (column 5 line 16-18), pressure sensitive adhesives and adhesive foams (column 5 lines 6-9). The articles are formed by melt-mixing a polymer composition and a plurality of microspheres, at least one of which is an expandable polymer selected to form an expandable and extrudable composition to be extruded through a die (see abstract). The plurality of the expandable and unexpandable microspheres may be used for producing a **foam**, *i.e.*, a matrix with voids (see discussion under Hartman et al.). The foams of Gehlsen et al. are substantially free of urethane and urea cross-linking, thus eliminating the need for isocyanates in a composition like the foam of an acrylic polymer where high cohesive strength and/or high modulus is needed, as the foam may be cross-linked. This differs from the present invention, as Applicants' compositions comprise thermoexpandable microspheres that are adhesion de-activating, not activating as taught by Gehlsen et al. (See, column 5, lines 8-9). Additionally, Applicants note that the present invention includes examples of hot melt adhesive compositions (see Examples). Therefore, the present invention is not obvious in view of Gehlsen et al. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections based on Gehlsen.

Additionally, Applicants submit that EP 0717091 (hereinafter "the '091 application") fails to teach or suggest the present invention. The '091 application teaches a pressure sensitive foam comprising a complexity of polymer materials and temperature activated expandable particulate materials. These expandable particulate materials comprise a polymeric shell and a volatilizable liquid core (see, page 3, line 51). The particulate material acts to provide volume changes or an expansion function of the composition while maintaining an intrinsic adhesion of greater than about 1N/cm. The '091 application does not disclose compositions comprising thermoexpandable microcapsules that act to deactivate the adhesive properties of the composition, nor a primer containing such microcapsules. Therefore, Applicants respectfully request reconsideration of the claims in view of these arguments.

In summation, the references cited in the Office Action principally disclose foams or pressure sensitive layered tapes. These references all fail to disclose compositions comprising an adhesive and thermally expandable microcapsules. The present invention does not involve foams, the use of foams or methods of making

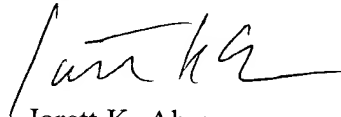
In re: Bain et al.
Serial No.: 09/980,219
Filed: April 18, 2002
Page 6 of 6

foamed articles. The central issue of the present invention is that adhesive compositions comprising microcapsules use the microcapsules to de-bond the adhesives either in their structure (to weaken their cohesive strength) or at their interface to create a zero shear stress at the adhesive surface. Furthermore, the present invention does not involve density reduction by cellular foam, pressure sensitive film and bonding tackiness as taught and suggested by the cited references. Accordingly, Applicants respectfully request reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejections to the claims.

CONCLUSION

In view of the remarks presented herein, applicants respectfully submit that the claims in the instant application define patentable subject matter. If questions should remain after consideration of the foregoing, the Examiner is kindly requested to contact applicants' attorney at the address or telephone number given herein.

Respectfully submitted,



Jarett K. Abramson
Registration No. 47,376

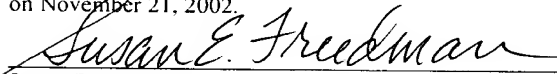


20792

PATENT TRADEMARK OFFICE

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Box NON-FEE AMENDMENT, Commissioner for Patents, Washington, DC 20231, on November 21, 2002.



Susan E. Freedman

Date of Signature: November 21, 2002